



UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON

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File

OCT 25 1961

Honorable McGeorge Bundy
Special Assistant to the President
The White House

Dear Mr. Bundy:

I think the attached background information
concerning fallout from the Soviet 30-megaton
explosion will be of interest to you.

Sincerely yours,

A. R. Luedecke

A. R. Luedecke
General Manager

Enclosure



UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON 25, D. C.

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OCT 25 1961

Mr. U. Alexis Johnson
Deputy Under Secretary of State
for Political Affairs
Department of State
Washington 25, D.C.

Dear Mr. Johnson:

We have arrived at some estimates regarding the fallout from the Soviet 30-megaton detonation of October 23, which may be of interest to the Department as background information.

It is estimated that at least 95% of the radioactive material from this detonation went into the stratosphere, where it will be diffused widely and will come to earth gradually--perhaps over a period of a year or more.

The rest of the material went into the troposphere, the lower level of the atmosphere and will result in early local fallout. Based on current weather data, it is estimated that some of this material was deposited in a local area extending several hundred miles down-wind from the detonation. The remainder will move south and then east, passing over Japan or north of it, and it is expected to then pass over Canada and the northern United States. The first fallout from this detonation may be detectable in the United States about the end of this week.

We have little information on fallout levels in the Soviet Union but, based on the smaller annual rainfall in the USSR and on published Soviet data concerning radioactivity levels, it is estimated that the Soviet tests in 1958 produced higher levels of long-lived fallout, such as strontium-90, in the United States than in the Soviet Union. Since the 30-megaton detonation is of higher yield than any previous Russian detonation, it is not certain that the fallout pattern will be the same as in 1958.

The levels of early local fallout extending several hundred miles down-wind from the detonation are dependent upon various circumstances, such as weather conditions at the time the radioactive material is passing a locality. The radiation levels in parts of the northern coast of

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Mr. Johnson

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Siberia could vary widely depending on these circumstances. For example, heavy snow or rain in the path of the cloud would substantially increase the radiation levels on the ground. In view of these factors estimates of local fallout can vary rather widely. For example, as reasonably postulated by the U.S. Weather Bureau, at 300 miles down-wind, the levels of radioactivity could have reached about $1\frac{1}{2}$ roentgens per hour at the time of arrival of the fallout. The maximum theoretical exposure from this fallout would be about 60 roentgens to persons remaining indefinitely out of doors in the area. However, a possible lower estimate would place the level of activity at one-thirtieth of these values. In the event it was snowing at the time of fallout, all of the above values may have increased by a factor of 5 or more.

Fallout levels that could be produced in the United States by this detonation can be discussed only in very general terms. A rough estimate would be that the entire Russian test series to date, including the 30-megaton detonation, would add perhaps 40-50 millicuries of strontium-90 per square mile to the 70 millicuries per square mile present in United States soil from all previous nuclear tests by all nations. Of that added amount, about half might be due to the 30-megaton detonation. Should the Soviet series be concluded with the explosion of a 50-megaton device, this detonation would deposit substantial additional amounts of strontium-90 per square mile in United States soil. This additional amount of strontium-90 would not be expected to increase the levels of strontium-90 in bone above the radiation exposure guides now in effect for the general public.

Sincerely yours,

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General Manager

cc: Mr. McGeorge Bundy ✓
Dr. Lester Machta

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October 29, 1961

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Dear Mr. Chairman:

The Department of State has supported the Atomic Energy Commission in keeping the door open for the resumption of atmospheric testing by the United States, should this become necessary in the interests of national security. We appreciate the difficulties of finding locations suitable for such testing. However, I have noted with concern that, in the event it should be decided that the United States is to resume the testing of atomic devices in the atmosphere, consideration is being given to the possible reactivation of the testing site on Eniwetok Atoll in the Trust Territory of the Pacific Islands. Use of the Eniwetok area would present us with particularly difficult problems.

Since our administration of the Territory is subject to supervision by the United Nations, we are required to defend our actions against hostile attack in the Trusteeship Council and in the Security Council, where the general revulsion against nuclear testing and a strong desire to protect the interests of dependent peoples create an unsympathetic atmosphere for the discussion of this question. We are especially vulnerable to charges that by conducting tests in the Trust Territory we avoid exposing our own continental inhabitants to the dangers involved in proximity to atomic blasts by exposing our Asian wards in the Trust Territory to these same dangers. Such an argument is strengthened by the fact that the people of Rongelap have already suffered some injury as a result of their proximity to an atomic blast in the past.

Another important factor in our thinking is our desire to maintain cordial relations with the people of the Trust Territory, who will probably be called upon eventually under the Trusteeship System to express their wishes as to their future, including the possibility of a continued close relationship with the United States. The unpopularity of nuclear testing among the island people would certainly influence their attitude on this question.

The Honorable
Glenn T. Seaborg,
Chairman, United States
Atomic Energy Commission.

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By seizing on the Trusteeship issue, those opposed to our testing would be able to adduce legal as well as political arguments purporting to distinguish our situation unfavorably from that of the Soviets. There is no doubt in our minds that the United States may legitimately conduct atomic tests within the Trust Territory of the Pacific Islands, and the United States has taken this position publicly on a number of occasions. It should nevertheless be recognized that a plausible argument may be, and has been, made to the contrary. For this reason, we have constantly been careful not to engage in a detailed legal defense of our right to test in the Trust Territory, since this would merely help to bring out all the arguments to the contrary. I do believe, however, we would face a much more concerted challenge in this respect than we had in the past and would run the serious risk of having the issue brought before the International Court of Justice where the possibility exists that we might be immediately enjoined from such use of the Territory, at least until the matter was finally passed on by the Court.

In view of these circumstances, I believe that we should seek to avoid using a site in the Trust Territory for any tests that may be decided upon. The Department of State would be glad to explore with the Atomic Energy Commission the possibilities of other alternative sites which would not pose the same problems.

Sincerely yours,

for Dean Rusk

Dean Rusk

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OCT 29 1961

A true copy of signed original

OCT 30 1961

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